Docket No.: E0295.70190US00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Michael Kilian et al.
Serial No.:	10/731,790
Confirmation No.:	4910
Filed:	December 9, 2003
For:	METHOD AND APPARATUS FOR DATA RETENTION IN A STORAGE SYSTEM
Examiner:	K. B. Pham
Art Unit:	2166

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Dated: 6-8-11 Signature: Javier D'Annunzio-Ellis

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Brief is filed in furtherance of a Notice of Appeal filed on March 8, 2011.

The fees required under § 41.20(b)(2) are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.2:

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

EMC Corporation

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 14 claims pending in application.

B. Current Status of Claims

1. Claims canceled: 1-64,
2. Claims withdrawn from consideration but not canceled: none,
3. Claims pending: 65-78,
4. Claims allowed: none,
5. Claims rejected: 65-78,

C. Claims On Appeal

The claims on appeal are claims 65-78,

IV. STATUS OF AMENDMENTS

Appellant did not file an Amendment After Final Rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present application relates to guaranteeing the retention of data for a defined period of time in a data storage system (Abstract). Conventional storage systems allow users to unintentionally, or perhaps maliciously, delete data, causing irreparable loss of data (page 1, lines 22-26). In some situations, for example, for a company that must abide by the regulations of the Securities and Exchange Commission (SEC), this deletion of data may violate the law (page 1, lines 18-26). In the sample embodiment of Figure 3, for example, a storage system ensures that data will be stored in an unmodified state for the full retention period.

A) Independent Claim 65

Independent claim 65 is directed to a method for use in a computer system:

65. A method for use in a computer system comprising at least one host and at least one storage system (page 14, lines 11-14; FIG. 1), the method comprising acts of:

(A) receiving a request, from the host, to delete a unit of content stored on the storage system (page 14, lines 14-21; FIG. 4), wherein a previously-defined retention period for the unit of

content is stored in the unit of content (page 8, lines 23-30; FIG. 3), wherein the request identifies the unit of content using a content address generated, at least in part, from at least a portion of the content of the unit of content (page 6, line 17 – page 7, line 2), and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period and at least some other content in the unit of content (page 18, lines 23-25);

(B) determining whether the previously-defined retention period for the unit of content has expired (page 14, lines 22-24; FIG. 4);

(C) when it is determined in the act (B) that the retention period for the unit of content has not expired, denying the request to delete the unit of content (page 14, lines 28-31; FIG. 4); and

(D) when it is determined in the act (B) that the retention period for the unit of content has expired, directly deleting the unit of content in response to the request (page 14, lines 24-28; FIG. 4).

B) Independent Claim 70

Independent claim 70 is directed to a computer readable storage medium encoded with instructions for performing a method:

70. At least one computer readable storage medium encoded with instructions (page 2, lines 15-17) that, when executed on a computer system, perform a method for use in the computer system, wherein the computer system comprises at least one host and at least one storage system (page 14, lines 11-14; ; page 23, line 22 – page 24, line 17; FIG. 1), and wherein the method comprises acts of:

(A) receiving a request, from the host, to delete a unit of content stored on the storage system (page 14, lines 14-21; FIG. 4), wherein a previously-defined retention period for the unit of content is stored in the unit of content(page 8, lines 23-30; FIG. 3), wherein the request identifies the unit of content using a content address generated, at least in part, from at least a portion of the content of the unit of content (page 6, line 17 – page 7, line 2), and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period and at least some other content in the unit of content (page 18, lines 23-25);

(B) determining whether the previously-defined retention period for the unit of content has expired (page 14, lines 22-24; FIG. 4);

(C) when it is determined in the act (B) that the retention period for the unit of content has not expired, denying the request to delete the unit of content (page 14, lines 28-31; FIG. 4); and

(D) when it is determined in the act (B) that the retention period for the unit of content has expired, directly deleting the unit of content in response to the request (page 14, lines 24-28; FIG. 4).

C) Independent Claim 75

Independent claim 75 is directed to a storage system:

75. A storage system for use in a computer system comprising at least one host and the storage system (page 5, lines 1-17; FIG. 1), the storage system comprising:

at least one storage device, comprising at least one physical storage medium. to store data received from the at least one host (page 23, lines 12-21; page 24, lines 14-17); and

at least one controller (page 2, lines 18-25) that;

receives a request, from the host, to delete a unit of data stored on the storage system (page 14, lines 14-21; FIG. 4), wherein a previously-defined retention period for the unit of content is stored in the unit of content (page 8, lines 23-30; FIG. 3), wherein the request identifies the unit of content using a content address generated, at least in part, from at least a portion of the content of the unit of content (page 6, line 17 – page 7, line 2), and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period (page 18, lines 23-25);

determines whether the previously-defined retention period for the unit of data has expired (page 14, lines 22-24; FIG. 4);

when it is determined that the retention period for the unit of data has not expired, denies the request to delete the unit of data and at least some other content in the unit of content (page 14, lines 28-31; FIG. 4); and

when it is determined that the retention period for the unit of content has expired, directly deletes the unit of content in response to the request (page 14, lines 24-28; FIG. 4).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether Claims 65-78 are properly rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2005/0055519 (Stuart) in view of U.S. Patent Publication 2005/0097260 (McGovern).

This grounds is argued in the following subparts:

A.1) Whether independent claims 65 and 70, and claims 66-69 (which depend from claim 65), and claims 71-74 (which depend from claim 70) are properly rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2005/0055519 (Stuart) in view of U.S. Patent Publication 2005/0097260 (McGovern).

A.2) Whether independent claim 75, and claims 76-78 (which depend from claim 75) are properly rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2005/0055519 (Stuart) in view of U.S. Patent Publication 2005/0097260 (McGovern).

Arguments for reversal for each of the above identified grounds for review are presented separately below. Accordingly, claims 65 and 75 do not stand or fall together.

VII. ARGUMENT

Appellant respectfully requests that the Final Rejection of all the claims be reversed.

A) Cited Art

The same combination of two references is applied against the claims in each group. These references are Stuart (U.S. Patent Publication No. 2005/0055519) and McGovern (U.S. Patent Publication 2005/0097260). However, these references, whether considered alone or in combination, do not meet every limitation of any of the claims.

The Office Action acknowledges that Stuart does ***not*** explicitly teach "wherein a previously-defined retention period for the unit of content is stored in the unit of content, wherein the request identifies the unit of content using a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period and at least some other content in the unit of content" (Final Office Action dated December, 13, 2010, p. 3).

Rather the Office Action cites McGovern as teaching this limitation. However, rather than storing the retention period in the unit of content itself and generating the content address of the unit based on the retention period, McGovern relates to storing the retention period for a file in metadata associated with the file. The address for that file is not generated based on the retention period (¶ 18, ¶ 20, ¶¶ 94-95).

B) The Office Action Erred in Rejecting Claims 65-78 Under 35 U.S.C. 103(a) as Being Unpatentable over U.S. Patent Publication No. 2005/0055519 (Stuart) in View of U.S. Patent Publication 2005/0097260 (McGovern).

Though Appellant argues claims separately below, all of the independent claims are rejected based on the same combination of two references using similar reasoning (see, Office Action dated December 13, 2010, pp. 5-9). Therefore, prior to arguing the claims separately, Appellant presents arguments applicable against all rejections. As detailed in the following sections, the combination of references fails to make a *prima facie* case of obviousness for at least two reasons, either one of which requires reversal of the rejections. First, none of the references teach or disclose "a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period." Thus, even if the references were combined as asserted in the Office Action, the combination would not meet all limitations of any of the claims. Second, one of skill in the art at the time of the invention would have had no reason to combine the two references, or at least would not have combined them in the way asserted in the Final Office Action.

1. Neither of the Cited References Discloses a Content Address Generated Using a Retention Period

The rejections are all premised on an interpretation of McGovern that is unreasonable and therefore is in error. Because all of the claims are rejected based on this error, the rejections should all be reversed.

As a preliminary mater, the Final Office Action does not identify any portion of the cited McGovern reference that discloses "a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period." This alone is an error that requires reversal of the rejections.

Moreover, even if the Office Action is interpreted as asserting that McGovern teaches a content address generated in a way that meets all limitations of any of the independent claims, then the rejection is still in error because it is based on an unreasonable interpretation of the reference. The Office Action appears to assert that McGovern teaches "the at least the portion of the content of the unit of content [from which the content address is generated] includes the previously-defined retention period" (text in [ ] does not appear in, but is understood to be implied by, the Final Office Action). In support of this assertion, the Office Action points to a portion of McGovern from the "Background of the Invention," which describes EMC's Centera and is cited by the Office Action as teaching a Content Addressable Storage (CAS) system (¶¶ 16-19). The Office Action then cites the "Summary of the Invention" as disclosing the retention period being associated with a file (¶ 20). Here, the Office Action is incorrectly asserting that these portions of McGovern together disclose generating a content address based on the retention period. However, this assertion is based on an improper interpretation of the reference.

This interpretation of McGovern is incorrect for at least four reasons.

First, contrary to what appears to be asserted in the Office Action, the cited passage at ¶ 20 does not describe that the retention period is stored as part of the content of a content unit.

Throughout the cited portion, it is stated that a "retention date is stored in the file's 'last access time' property/attribute field or another metadata field [] that remains permanently associated with the file," however the passage does not teach the proposition for which it is cited. Being "permanently associated with the file" is not the same as being stored in the contents of the file itself and thus does not disclose the claimed feature of "a portion of the content of the unit of content."

The cited passage merely describes that the computed retention date is stored as part of a file's metadata, particularly the "last access time" property/attribute field. Assuming arguendo, although Applicants respectfully disagree, that a file is regarded as a content unit, such metadata clearly would not be part of the content of the file. To the contrary, McGovern describes that this metadata field was selected to store the retention date because it "is non-essential and rarely utilized in a WORM context." Clearly, this description does not apply to "the content of the unit of content." Therefore, it is improper to interpret McGovern as describing that the metadata field could be "a previously-defined retention period for the unit of content is stored in the unit of content," and it was error to base a rejection on such an interpretation of McGovern.

Second, assuming arguendo, although Applicants respectfully disagree, that a file is regarded as a content unit, McGovern cannot be interpreted as teaching "a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period," because there is no disclosure in McGovern of an address of a file generated from content that "includes the previously-defined retention period." Contrary to what appears to be the contention made in the Office Action, McGovern does not describe that the address of the file described at ¶ 20 is formed based on either the content of that file or the retention period in the metadata associated with that file . Rather, the Office Action cited ¶ 17 as teaching generation of an address. Though ¶ 17 describes a content addressable storage system in which an address for a content unit is formed, that passage is unrelated to the passage at ¶ 20.

It is clear from McGovern that the passage at ¶ 17 and the passage at ¶ 20 are describing separate systems. The passage at ¶ 17 is part of the Background and specifically describes a content

addressable storage (CAS) system that is undesirable for implementing the techniques that are the invention of McGovern because, according to McGovern: "applications can only access the storage and manipulate records through proprietary mechanisms...."(¶ 16). In contrast, the passage at ¶ 20 is part of the Summary of the Invention and is specifically directed to avoiding the disadvantages of the prior art because its "retention data scheme does not utilize any proprietary application program interfaces." In contrast to McGovern's characterization of the system at ¶ 17, the system described at ¶ 20 avoids proprietary programming interfaces by implementing a "Write Once, Read Many" (WORM) storage system that "does not utilize any proprietary application programming interfaces," but instead utilizes conventional file system properties and functionalities (¶ 20). Therefore, rather than allowing an inference that ¶ 20 is describing an operation that is implemented with the content addressable storage system as described at ¶ 17, the plain language of McGovern makes clear that such is not the case.

Third, assuming arguendo, although Applicants disagree, that McGovern could be interpreted as describing that an address is generated for the file described at ¶ 20 using the CAS address generation technique at ¶ 17 there is still no basis to interpret McGovern as disclosing " a content address generated, at least in part, from...the previously-defined retention period." Rather, as noted above, the retention date is expressly described as part of the metadata, which is not the content of the file and thus McGovern cannot disclose the recited claim feature of "a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period."

Indeed, the Office Action's interpretation of the reference as using metadata associated with a file to generate the content address for the file is inconsistent with the description of McGovern. McGovern discusses that the properties/attributes of a file are able to be modified after the file has been stored. Specifically, in ¶ 127 and Figure 12, McGovern states that the attribute that stores the retention period can be modified after the initial setting of the retention period. In contrast, McGovern states, in connection with respect to a CAS that modifying the content is ***impossible*** (¶ 18, emphasis added). Clearly, McGovern cannot be interpreted, as implied by the Office Action,

as describing that the modifiable retention period is stored as part of the ***un***-modifiable content of the CAS. Such an interpretation requires using a CAS in a way that the reference declares to be "impossible."

Fourth, the Office Action selected disparate and unrelated portions of McGovern and combined them to assert that McGovern teaches storing a retention date as part of the content of a content unit that is used to generate a content address. The Board of Patent Appeals and Interferences has consistently held that this approach to combining pieces from different embodiments, even if disclosed in one reference, is improper. (*See, for example*, Ex parte Sato (Appeal No. 2009-003331) (non-precedential), The Board overturned the rejection, holding that the "[t]he Examiner has combined the Liang '037 Figures 1 and 13 without establishing a direct relation of the relied-upon features (Decision, p. 5).").

Therefore, the rejections are all based on an unreasonable interpretation of McGovern, and must be reversed.

2. The Combination of Stuart and McGovern is Improper

Further, even if McGovern is interpreted as teaching "the at least the portion of the content of the unit of content [from which the content address is generated] includes the previously-defined retention period," as appears to be asserted in the Final Office Action (text in [ ] does not appear in the Final Office Action), the rejections are all premised on an inadequate reason for combining two disparate references. The Final Office Action dated December 13, 2010 (page 3) asserts that Stuart and McGovern are analogous art and a person having ordinary skill in the art would have been motivated to combine the two references because they are both directed to methods for managing file retention. The Final Office Action asserts that the two references would have been combined to protect data files such that only unnecessary data can be deleted and that using a file identifier generated from the content of the file would prevent accidental deletion of files of similar filenames.

However, this combination is improper because McGovern and Stuart would not have been combined as asserted in the Final Office Action. Though the Office Action asserts that Stuart and

McGovern "are analogous art, pertinent to the problem to be solved," this is not enough. There has to be some reason to combine features of the references (M.P.E.P. 2141(III) "The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.... there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."). These references do not meet that standard. Each of the references discloses a technique to store information about a retention period for a file. Stuart discloses two embodiments, neither of which has features that would reasonably have been combined with the teachings of McGovern to arrive at what is claimed.

Stuart, discloses a first embodiment in which a retention period is managed through a directory structure created to store files. As shown for example in FIG. 2, different directories are created for storing files of different retention periods. Thus, the directory in which a file is stored identifies its retention period. In contrast, McGovern describes re-purposing a "last access time" field in the metadata associated with a file to identify the retention period.

When this first embodiment of Stuart is considered, the references are presenting different approaches to achieve the same goal. If information about the retention period is available through the directory structure, as in the first embodiment of Stuart, there is no reason to store it in the "last access time" field of McGovern. At most, one of skill in the art might have been motivated to select between these approaches, because retaining information about a retention period using the technique of one of the references would become superfluous once the technique for retaining the retention period of the other was used. However, there is no basis to assert that one of skill in the art would have used these techniques together, as the Final Office Action appears to assert. Therefore, the combination is improper.

Stuart also discloses a second embodiment, which provides no basis for a combination with McGovern in a way that would lead to what is claimed. In Stuart's second embodiment, instead of extracting the retention period from the directory structure, information pertaining to the retention period is stored in metadata associated with each record or directory (¶ 47). If a person of ordinary skill in the art were to look to modify the second embodiment of Stuart based on McGovern, they

would see that McGovern also teaches storing the retention period in metadata. At most, such a skilled person would apply McGovern's more specific teaching to store metadata in a "last access time" property/attribute field based on McGovern's teaching that such a field is likely to be unused. However, such a teaching merely duplicates what is in McGovern and does not result in a combination that meets all limitations of the claims. Therefore, the combination of Stuart and McGovern is improper.

Finally, the Office Action fails to give a clear and objective reason for combining Stuart and McGovern based on the disclosures of the references themselves. There is no explanation in the Final Office Action as to how features of Stuart and McGovern are combined in such a way as to meet all limitations of the claims. There is no explanation as to how the teachings of Stuart and McGovern are combined to meet the limitation of the claim that recites: "a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period." Moreover, some aspects of the stated reason for combination appear unrelated to either reference. Rather, the stated reason appears to have been drawn from the present application. Specifically, the Office Action asserts that "Using the file identifier generated from the content of the file would prevent accidentally deleting files based on similar file names." This hindsight is improper for justifying a combination of references.

For the foregoing reasons, the rejections are all based on an improper combination of Stuart and McGovern, which requires reversal.

3. The Rejection of Claims 65-74 is Improper

The rejection of independent claims 65 and 70 should be reversed because each recites limitations not met by the combination of references. The claims both recite "wherein ***a previously-defined retention period for the unit of content is stored in the unit of content.***" Both claims also recite: "***a content address generated, at least in part, from at least a portion of the content of the unit of content and wherein the at least a portion of the content of the unit of content includes the***

previously-defined retention period and at least some other content in the unit of content."(emphasis added) Neither aspect of the claims is met by the combination of Stuart and McGovern.

As described in subsection 1 above, neither reference describes "***a previously-defined retention period for the unit of content is stored in the unit of content,***" (emphasis added) as recited in independent claims 65 and 70. Neither the directory structure of Stuart nor the metadata of Stuart and/or McGovern meets this limitation.

Further, neither reference discloses "***a content address generated, at least in part, from at least a portion of the content of the unit of content and wherein the at least a portion of the content of the unit of content includes the previously-defined retention period*** and at least some other content in the unit of content."(emphasis added). Though McGovern discloses a system that generates a content address, as explained above, there is no reasonable interpretation of McGovern under which the reference can be said to describe: "a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period," as would be required to meet all limitations of the claims.

Therefore, even if Stuart and McGovern were combined, the combination would not meet all limitations of independent claims 65 and 70. Accordingly, the rejections of claims 65 and 70 should be reversed.

The rejections of dependent claims 67-69 and 72-74 should be reversed for the same reasons. Claims 67-69 depend from claim 65 and incorporate all of the limitations of the independent claim. Claims 72-74 depend from claim 70 and incorporate all of the limitations of the independent claim. Thus, the rejections of dependent claims 67-69 and 72-74 should be reversed.

4. Claims 75-78

The rejection of independent claim 75 should be reversed because it recites at least one limitation not met by the combination of references. The claim recites "wherein ***a previously-defined retention period for the unit of content is stored in the unit of content.***" (emphasis added). The claims further recite that "the request identifies the unit of content using ***a content address generated, at least in part, from at least a portion of the content of the unit of content and wherein the at least a portion of the content of the unit of content includes the previously-defined retention period*** and at least some other content in the unit of content." (emphasis added). Neither of these recited features of the claims is met by the combination of Stuart and McGovern.

As described in subsection 1 above, neither reference describes "a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period." Therefore, even if Stuart and McGovern were combined, the combination would not meet the above limitation of independent claim 75. Accordingly, the rejection of claims 75 should be reversed.

The rejections of dependent claims 76-78 should be reversed for the same reasons. Claims 76-78 depend from claim75 and incorporate all of the limitations of the independent claim. Thus, the rejections of dependent claims 76-78 should be reversed.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

IX. CONCLUSION

For the foregoing reasons, all of the claims on appeal are not obvious in light of Stuart and McGovern. Accordingly, the rejections of all claims should be reversed.

Appellant believes that all fees due with this response have been paid separately. However, if a further fee is due, please charge our Deposit Account No. 23/2825 under Docket No. E0295.70190US00 from which the undersigned is authorized to draw.

Dated: June 9, 2014

Respectfully submitted,

By
Edmund J. Walsh
Registration No.: 32,950
WOLF, GREENFIELD & SACKS, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
617.646.8000

CLAIMS APPENDIX

Claims Involved in the Appeal of Application Serial No. 10/731,790 as Required by 37 CFR 41.37(c)(1)(viii)

65. A method for use in a computer system comprising at least one host and at least one storage system, the method comprising acts of:

(A) receiving a request, from the host, to delete a unit of content stored on the storage system, wherein a previously-defined retention period for the unit of content is stored in the unit of content, wherein the request identifies the unit of content using a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period and at least some other content in the unit of content;

(B) determining whether the previously-defined retention period for the unit of content has expired;

(C) when it is determined in the act (B) that the retention period for the unit of content has not expired, denying the request to delete the unit of content; and

(D) when it is determined in the act (B) that the retention period for the unit of content has expired, directly deleting the unit of content in response to the request.

66. The method of claim 65, wherein the acts (A), (B) and (C) are performed by the storage system.

67. The method of claim 65, further comprising an act (D) of, prior to performing the acts (A), (B) and (C), receiving information specifying the retention period for the unit of data.

68. The method of claim 65, further comprising acts of, prior to performing the acts (A), (B) and (C):

(D) receiving the unit of data at the storage system; and

(E) writing the unit of data to the storage system.

69. The method of claim 68, further comprising acts of, prior to performing the acts (A), (B) and (C):

(F) receiving information specifying the retention period for the unit of data along with the unit of data; and

(G) writing the information specifying the retention period to the storage system.

70. At least one computer readable storage medium encoded with instructions that, when executed on a computer system, perform a method for use in the computer system, wherein the computer system comprises at least one host and at least one storage system, and wherein the method comprises acts of:

(A) receiving a request, from the host, to delete a unit of content stored on the storage system, wherein a previously-defined retention period for the unit of content is stored in the unit of content, wherein the request identifies the unit of content using a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period and at least some other content in the unit of content;

(B) determining whether the previously-defined retention period for the unit of content has expired;

(C) when it is determined in the act (B) that the retention period for the unit of content has not expired, denying the request to delete the unit of content; and

(D) when it is determined in the act (B) that the retention period for the unit of content has expired, directly deleting the unit of content in response to the request.

71. The at least one computer readable storage medium of claim 70, wherein the acts (A), (B) and (C) are performed by the storage system.

72. The at least one computer readable storage medium of claim 70, further comprising an act (D) of, prior to performing the acts (A), (B) and (C), receiving information specifying the retention period for the unit of data.

73. The at least one computer readable storage medium of claim 70, further comprising acts of, prior to performing the acts (A), (B) and (C):

(D) receiving the unit of data at the storage system; and

(E) writing the unit of data to the storage system.

74. The at least one computer readable storage medium of claim 73, further comprising acts of, prior to performing the acts (A), (B) and (C):

(F) receiving information specifying the retention period for the unit of data along with the unit of data; and

(G) writing the information specifying the retention period to the storage system.

75. A storage system for use in a computer system comprising at least one host and the storage system, the storage system comprising:

at least one storage device, comprising at least one physical storage medium. to store data received from the at least one host; and

at least one controller that;

receives a request, from the host, to delete a unit of data stored on the storage system, wherein a previously-defined retention period for the unit of content is stored in the unit of content, wherein the request identifies the unit of content using a content address generated, at least in part, from at least a portion of the content of the unit of content, and wherein the at least the portion of the content of the unit of content includes the previously-defined retention period;

determines whether the previously-defined retention period for the unit of data has expired;

when it is determined that the retention period for the unit of data has not expired, denies the request to delete the unit of data and at least some other content in the unit of content; and

when it is determined that the retention period for the unit of content has expired, directly deletes the unit of content in response to the request.

76. The storage system of claim 75, wherein the at least one controller receives information specifying the retention period for the unit of data.

77. The storage system of claim 75, wherein the at least one controller receives the unit of data and writes the unit of data to the at least one storage device.

78. The storage system of claim 75, wherein the at least one controller receives information specifying the retention period for the unit of data along with the unit of data and writes the information specifying the retention period to the at least one storage device.

EVIDENCE APPENDIX

Evidence Appendix as Required by 37 CFR 41.37(c)(1)(ix)

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

RELATED PROCEEDINGS APPENDIX

Related Proceedings Appendix as Required by 37 CFR 41.37(c)(1)(x)

No related proceedings are referenced in II. above, hence copies of decisions in related proceedings are not provided.